Item 53 FY96
04DS1
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PURCHASE DESCRIPTION

OSCILLOSCOPE, DIGITIZING

OD1AF-C

1.0 GENERAL This procurement requires a dual channel digital storage oscilloscope.

2.0 CLASSIFICATION Type II, Class 5, Style E, and Color R in accordance with MIL-T-28800 for shipboard applications.

3.0 OPERATION REQUIREMENTS The equipment shall be capable of measuring, displaying, and storing waveforms within the minimum ranges, specifications, and accuracies detailed below.

3.1 Vertical System The equipment shall be capable of simultaneous and synchronous acquisition, measurement, display, and storage of two inputs.

3.1.1 Bandwidth: DC to 500 MHz for repetitive signals
AC coupled low frequency roll off: 10 Hz or less
3.1.1.1 Limit: 20 MHz low-pass filter (reduce high frequency interference; one channel)

3.1.2 Sensitivity: 2 mV/div to 5 V/div
3.1.2.1 Effective bits: 6 bits minimum
3.1.2.2 Accuracy: ±2% of full scale (FS)

3.1.3 Display modes: Channel 1 only, channel 2 only, or both channels simultaneously

3.1.4 Maximum vertical input: At any vertical deflection factor: ±250V (DC + peak AC) at frequencies up to 10 kHz

3.1.5 Input impedance: 1 megohm paralleled by 7-10 pF, nominal

3.1.6 Waveform math: The equipment shall be capable of performing addition, subtraction, and channel 1 vs. channel 2 on the input signals. The equipment shall be capable of inverting both channels.

3.2 Horizontal system

3.2.1 Resolution: 500 points per channel minimum

3.2.2 Sample rate: 250 mega-samples per channel per second

3.2.3 Time base range: 1 ns/div to 5s/div. Accuracy: ±0.1%

3.2.4 Delay: Pre-trigger: 7/8 screen. Post-trigger: 10 divisions minimum

3.2.5 Trigger sensitivity: 0.5 division or less (DC to 100 MHz), 1 division or less (100 to 500 MHz). Minimum trigger pulse width: 2 ns

3.2.6 Time base expansion: The equipment shall be capable of simultaneously displaying a reference sweep and an expanded portion of that sweep. The expansion ratio shall range from 2:1 to 20:1 or greater.

3.3 Parametric Measurements The equipment shall be capable of automatically measuring and displaying the following parameters of the displayed signal: period, frequency, width (+ and -), rise time, fall time, peak (+ and -), peak-to-peak, and rms amplitude. Rise and fall times shall be measured between the proximal and distal points, and width shall be measured between the mesial points of pulse waveforms. Pulse parameters shall be as defined in IEEE standard 194-1977, "Standard Pulse Terms and Definitions."

3.4 CRT The signal display grid shall measure at least 76 mm (3 in) x 95 mm (3.75 in). The display grid shall be ruled in eight vertical and ten horizontal divisions with the center axes subdivided in 0.2 division increments.

3.5 Automatic Setup The equipment shall be equipped with a single push-button control that will initiate automatic adjustment of the vertical and horizontal deflection factors and trigger level for an optimized display of the input signals. This function shall operate with signals exceeding 1% duty cycle and frequencies exceeding 50 Hz.

3.6 Waveform Storage The equipment shall be capable of storing not less than four waveforms with associated vertical and horizontal settings in non-volatile memory.

4.0 GENERAL REQUIREMENTS

4.1 Power Source MIL-T-28800 nominal power source requirements are invoked. Maximum power consumption: 400W

4.2 Lithium Batteries Per MIL-T-28800, lithium batteries are prohibited without prior authorization. Requests for approving the use of lithium batteries, including those encapsulated in integrated circuits, shall be submitted to the procuring activity at the time of submission of proposals. Approval shall apply only to the specific model proposed.

4.3 Weight 13.6 kg (30 lb) maximum

4.4 Digital interface A digital interface is required in accordance with MIL-T-28800.

4.5 Accessories Two X10 probes with cables approximately 1.5m (4.9 ft) long